

REMARKS/ARGUMENTS

Claims 1-16, 25-30, 37-40, and 50 are pending in the application. Claims 17-24, 31-36, 41-44, and 45-49 have been cancelled without prejudice and disclaimer. Claims 8-16, 25-30, and 37-40 have been withdrawn from consideration due to a previous Election of Species Requirement. New claim 50 has been added to recite additional features disclosed on page 26, lines 12-22 of the specification as filed. No new matter has been added.

Reconsideration of the application as amended is respectfully requested.

Overview of the Office Action

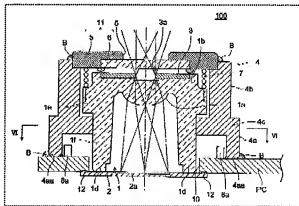
Claims 48 and 49 have been objected to under 37 C.F.R. § 1.75 as being a substantial duplicate of claims 45 and 46.

Claims 1-7 and 45-49 have been rejected under 35 U.S.C. § 102(b) as being anticipated by EP 1148716 to MIYAKE.

Summary of Subject Matter Disclosed in the Specification

The following descriptive details are based on the specification. They are provided only for the convenience of the Examiner as part of the discussion presented herein, and are not intended to argue limitations which are unclaimed.

The present specification discloses an image pickup device (100) formed on a base board PC, in which opening portion (10) is formed. An image pickup element (2) is provided to cover the opening portion (10) from the rear side of the base board PC. An optical member (1) is provided for converging on image pickup element (2) through the opening portion (10)



from the surface side of the base board PC by touching a light-intercepting surface representing

the surface of the image pickup element (2). (See, e.g., Fig. 2 reproduced above for the Examiner's convenient reference.) The optical member (1) includes a lens portion (1a) to form an image of an object onto the optical pickup element (2), a leg portion (1c) to support the lens portion (1a) and a contact portion (1d) to be brought in contact with the image pickup element (2). (See, e.g., pg. 33, ln. 15 to pg. 36, ln. 2 of the specification as filed.)

The image pickup device (100) also comprises a lens frame (4) representing an outer frame member that covers the image pickup element (2) and the opening portion (10). The inner surface of the outer frame is engaged with the optical member (1). The outer frame is arranged at a prescribed position on the base board so that a center of a photoelectric conversion portion of the image pickup element (2) agrees with a center of an optical axis of the lens portion (1a) of the optical member (1). (See, e.g., pg. 31, ln. 2 to pg. 32, ln. 10 and pg. 36, ll. 12-22 of the specification as filed and Fig. 2.)

Formality Claim Objections

The objections to claims 48 and 49 are moot in view of the above claim amendments.

Allowability of the Claims

Independent Claim 1

Independent claim 1 recites that "the outer frame member is arranged at a prescribed position on the base board so that a center of a photoelectric conversion portion of the image pickup element agrees with a center of an optical axis of the lens portion of the optical member."

When rejecting independent claim 1, the Office Action interprets resin 9 in MIYAKE's image pickup device as the claimed "outer frame member" (see, page 4 of the Office Action). Applicants disagree because the resin 9 in MIYAKE is provided for sealing purpose and not arranged at a prescribed position on the substrate 1, as is the outer frame member recited in independent claim 1.

More specifically, MIYAKE discloses the following in connection with resin 9:

The imaging device ... is embodied by means of sealing the entirety of the optical element 3 exclusive of the imaging lens section 3a with resin 9 for an optical element sealing purpose. The structure of the device according to the present embodiment enables an improvement in the reliability of a bonded section between the optical element 3 and the substrate 1; that is, the reliability of a section bonded by means of the adhesive 5. (See, para. [0055] of MIYAKE; emphasis added.)

As shown in Fig. 13, the optical element 3 shown in Figs. 7A and 7B may be sealed with the sealing resin 9. In this case, the optical element 3 can be integrated with the substrate 1 by means of the sealing resin 9, thus the adhesive 5 for bonding the optical element 3 to the substrate 1 can be omitted. (See, para. [0056].)

Indeed, MIYAKE claims that its imaging device further comprises “optical element sealing resin (9) which covers the optical element (3) remaining in contact with the upper surface of the imaging element (2), thereby integrating the optical element (3) with the substrate (1), and which has an extraneous material entry prevention function, a moisture-absorption prevention function, and a shock dampening function.” (See, claim 7.)

In view of the above teachings of MIYAKE's, one skilled in the art will understand MIYAKE's sealing resin 9 as a shapeless substance, which can deform to conform to the optical element 3 for sealing purpose. Consequently, MIYAKE's sealing resin 9 does not have any positioning function. In other words, the sealing resin 9 cannot be arranged at a prescribed position on the substrate 1 through engagement with the optical member 3 so that a center of a light-receiving surface 2a of the imaging element 2 agrees with a center of an optical axis of the imaging lens section 3a of the optical member 3. In fact, the optical element 3 in MIYAKE is assembled within the opening section 1a of the substrate 1 before the resin 9 is formed on the optical element 3 (see, e.g., Figs. 12 and 13 and paras. [0021] and [0055] of MIYAKE). Therefore, the resin 9 in MIYAKE has no function of centering the lens portion of the optical element 3 in relation to the imaging element 2.

Therefore, MIYAKE does not teach “the outer frame member is arranged at a prescribed position on the base board so that a center of a photoelectric conversion portion of the image pickup element agrees with a center of an optical axis of the lens portion of the optical member,” as recited in independent claim 1. Accordingly independent claim 1 and its dependent claims 2-7 patentably distinguish over MIYAKE.

The rejections of claims 1-7 are thus believed to have been overcome. Withdrawal of the rejections is hereby respectfully requested.

Dependent Claims 2-16, 25-30, 37-40, and 50

Claims 2-16, 25-30, and 37-40 depend, either directly or indirectly, from independent claim 1 and therefore are allowable therewith.

In addition, these dependent claims include features which serve to still further distinguish the claimed invention over the prior art of record.

For example, new claim 50 recites that “the outer frame member positions the optical member on the base board.” In contrast, the resin 9 in MIYAKE is placed on the optical element 3 after the optical element 3 is in position. Accordingly, MIYAKE’s resin 9 cannot position the optical element 3, as does the claimed outer frame member recited in claim 50. Therefore, claim 50 is allowable for the above additional reasons.

Conclusion

Based on all of the above, applicants submit that the present application is now in full and proper condition for allowance. Prompt and favorable action to this effect, and early passage of the application to issue, are once more solicited. Should the Examiner have any comments, questions, suggestions or objections, the Examiner is respectfully requested to telephone the undersigned in order to facilitate reaching a resolution of any outstanding issues.

No fees or charges are required at this time in connection with the present application. However, if any fees or charges are required at this time, they may be charged to our PTO Deposit Account No. 03-2412.

Respectfully submitted,
COHEN PONTANI LIEBERMAN & PAVANE LLP

By /Alfred W. Froebrich/
Alfred W. Froebrich
Reg. No. 38,887
551 Fifth Avenue, Suite 1210
New York, New York 10176
(212) 687-2770

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